

## REMARKS

In accordance with the foregoing, the specification and various claims have been amended. Claims 1-31 are pending and under consideration.

### **Claim Rejection under 35 U.S.C. 101**

In section 1 of the Office Action on page 2, the Examiner has rejected claims 14-19 and 28-31 under 35 U. S. C. 101 and has taken the position that the claimed invention is directed to non-statutory subject matter. By this amendment, claims 14-19 and 28-31 have been amended in a manner to place them in compliance with 35 U. S. C. 101.

### **Rejection of Claims 6, 7, 12, 13, 18 and 19 under 35 U.S.C. 102**

In section 2 on page 2 of the Office Action, the Examiner rejected claims 6, 7, 12, 13, 18 and 19 under 35 U. C. C. 102 as being anticipated by Fink et al. (U. S. 6,469,935).

Claim 6 as amended is directed to a packet forwarder which forwards a packet from its network interface to its other network interface according to its routing table that makes a destination address of a packet associate with a next transfer destination. The packet forwarder comprises a received packet transfer unit that transmits a routing information packet received at the network interface to a packet control device that maintains the routing table of the packet forwarder using a routing process that generates the routing table based on routing information based on the packet received at the network interface.

The Fink et al. reference is directed to a system, a device and a method for accelerating packet filtration for supplementing a fire wall with a pre-filtering module. A pre-filtering module 30 determines whether a packet has been received from a permitted data transmission. Once a connection has been established, communication between a source node and destination maybe bi-directional. If the pre-filtering module 30 determines that the current packet is permitted to enter, then the pre-filtering module 30 passes the packet directly through to a protected network 12 without going through a firewall 18 (column 6, lines 30-54).

Fink does not disclose:

A packet forwarder which forwards a packet from its network interface to its other network interface according to its routing table that makes a destination address of a packet associate with a next transfer destination, comprising a received packet transfer unit that transmits a routing information packet received at the network interface to a packet control device that maintains the routing table of the packet forwarder using a routing process that generates the routing table based on routing

information on the packet received at the network interface.

Therefore, it is submitted that claim 6 patentably distinguishes over the prior art.

Referring to independent claim 12, it is submitted that Fink does not teach or suggest the claimed method of maintaining a routing table:

wherein the routing table makes a destination address of a packet associate with a next transfer destination.

Therefore, it is submitted the claim 12 patentably distinguishes over the prior art.

Referring to claim 18 it is submitted that Fink does not teach or suggest the claimed computer readable storage:

wherein the routing table makes a destination address of a packet associate with a next transfer destination.

Therefore it submitted that claim 18 patentably distinguishes over the Fink et al.

Claims 7, 13 and 19 depend from claims 6, 12 and 18, respectively and include all the features of the claim from which they depend plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted the claims 7, 13 and 19 patentably distinguish over Fink et al.

#### **Rejection of Claims 10, 11, 16, 17, 20, 24 and 28 under 35 U. S. C. 102**

In section 8 on page 5 of the Office Action, the Examiner has rejected claims 10, 11, 16, 17, 20, 24, and 28 under 35 U. S. C. 102 as being anticipated by Foster et al. (U. S. Publication No: 2003/0204618)

Claim 10 is directed to a method of maintaining a routing table in the system that includes a packet forwarder and a packet control device. The packet forwarder includes a plurality of network interfaces, while the packet control device includes a plurality of network interfaces and a plurality of virtual interfaces. Each of the virtual interfaces has address information that is associated with one of the network interfaces of the packet forwarder. The method comprises dividing the network interfaces of the packet control device and the virtual interfaces into a plurality of groups, and maintaining a routing table for each of the groups using a routing process associated with the each of the groups.

The Foster patent publication is directed to a method, system and computer-readable medium for processing received data communications that are routed through a network by using virtual identifiers. Foster discloses that each interconnect fabric module (IFM) may contain a virtual identifier table for each of its ports that maps virtual identifiers to its destination ports

(page 5, paragraph [0029]). Each virtual identifier is assigned to a path through a network to a destination, such as by a network manager for the network (page 2, paragraph [0013]).

Foster fails to disclose the method of claim 10 in which:

the packet forwarder including a plurality of network interfaces, the packet control device including a plurality of network interfaces and a plurality of virtual interfaces, each of the virtual interfaces having address information that is associated with one of the network interfaces of the packet forwarder, the method comprising:

dividing the network interfaces of the packet control device and the virtual interfaces into a plurality of groups; and

maintaining a routing table of each for the groups using a routing process associated with each of the groups.

Therefore it is submitted that claim 10 patentably distinguishes over the prior art.

Referring to claim 16, it is submitted that Foster does not teach or suggest the claimed computer readable storage in which:

the packet forwarder including a plurality of network interfaces, the packet control device including a plurality of network interfaces and a plurality of virtual interfaces, each of the virtual interfaces having address information that is associated with one of the network interfaces of the packet forwarder, the computer program product including computer executable instructions stored on a computer readable medium which, when executed by the computer, cause the computer to perform:

dividing the network interfaces of the packet control device and the virtual interfaces into a plurality of groups; and

maintaining a routing table of each of the groups using a routing process associated with each of the groups.

Therefore, it is submitted that claim 16 patentably distinguishes over the prior art.

Referring to claim 20 it is submitted that Foster does not teach or suggest the claimed router control device which includes:

a virtual interface setting unit that creates and manages virtual interfaces on a router control device according to corresponding network interfaces of a forwarder, each of the virtual interfaces having address information that is associated with one of the network interfaces of the forwarder;

Therefore, it is submitted the claim 20 patentably distinguishes over the prior art.

Referring to the method of claim 24, it is submitted that Crawford does not teach or suggest:

creating and managing virtual interfaces on a router control device according to corresponding network interfaces of a

forwarder, each of the virtual interfaces having address information that is associated with one of the network interfaces of the forwarder;

Therefore, it is submitted that claim 24 patentably distinguishes over the prior art.

Claims 11 and 17 depend from claims 10 and 16, respectively, and include all the features of the claim once they depend plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted the claims 11 and 17 patentably distinguish over the prior art.

### **Rejection of Claims 1-5, 8, 9, 14, and 15 under 35 U.S.C. 103**

In section 16 on page 10 of the Office Action, the Examiner has rejected claims 1-5, 8, 9, 14 and 15 under 35 U. C. C. 103 as being unpatentable over Fink et al. (U. S. 6,496,935) and Foster et al. (U. S. Publication No. 2003/0204618)

Claim 1 is directed to a packet control system which comprises a packet forwarder and a packet control device. The packet forwarder has a received packet transfer unit that transmits to the packet control device a routing information packet received from the network interface. The packet control device includes a virtual interface, a transmitted packet reception unit and a transmitted packet transfer unit. The virtual interface has address information associated with the network interface of the packet forwarder. The transmitted packet reception unit receives the routing information packet, that associates the routing information packet with the virtual interface, and that delivers the routing information packet to the routing process. The transmitted packet transfer unit receives the routing information packet sent by the routing process and transfers the routing information packet to the packet forwarder. As a result, it is possible to provide an operation environment equivalent to that in which a routing application operating on the packet control device operates on the packet forwarder. Therefore, the forwarding function and the control function of the router can be separated without modifying the conventionally used routing application (page 52, lines 15-20 of the specification).

The Examiner asserts, at page 11 of the Office Action, that a virtual interface that has address information associated with the network interface of the packet forwarder is disclosed by Foster (page 5, paragraph [0029], where the virtual identifier translation table reflects the IP ports related to the virtual interfaces of the VPN).

However, Foster merely discloses that each IFM may maintain a virtual identifier table for each of its ports that maps virtual identifiers to its destination ports (page 5, paragraph [0029]). Each virtual identifier is an identifier assigned to a path through a network to a destination (page

2, paragraph [0013]).

Referring to the packet control system of claim 1 it is submitted that the prior art does not teach or suggest the claimed packet control device in which:

a virtual interface that has address information associated with the network interface of the packet forwarder;

a transmitted packet reception unit that receives the routing information packet, that associates the routing information packet with the virtual interface, and that delivers the routing information packet to the routing process;

Therefore it is submitted that claim 1 patentably distinguishes over the prior art.

Referring to claim 2 it is submitted that the prior art does not teach or suggest the claimed packet control device which includes:

a virtual interface that has address information associated with the network interface of the packet forwarder;

a transmitted packet reception unit that receives the routing information packet transmitted from the packet forwarder, that associates the routing information packet with the virtual interface corresponding to an incoming network interface of the packet forwarder, and that transmits the routing information packet to the routing process;

Therefore it is submitted the claim 2 patentably distinguishes over the prior art.

Referring to claim 4, it is submitted that the prior art does not teach or suggest the claimed packet control device which includes:

a plurality of virtual interfaces each having address information that is associated with one of the network interfaces of the packet forwarder, the network interfaces of the packet control device and the virtual interfaces being divided into a plurality of groups,

Therefore, it is submitted that claim 4 patentably distinguishes over the prior art.

Referring to the method of claim 8, it is submitted that prior art does not teach or suggest the claimed method which includes:

associating the routing information packet with a virtual interface that has address information associated with a network interface of the packet forwarder;

Therefore, it is submitted that claim 8 patentably distinguishes over the prior art.

Referring to claim 14, it is submitted the prior art does not teach of suggest the claimed computer readable storage which includes:

associating the routing information packet with a virtual interface that has address information associated with the network interface;

Therefore, it is submitted that claim 14 patentably distinguishes over the prior art.

Claims 3, 5, 9 and 15 depend from one of the above-identified independent claims and include all the features of the claim from which they depend plus additional features which are not taught or suggested by the prior art. Therefore it is submitted that claim 3, 5, 9 and 15 patentably distinguish over the prior art.

**Rejection of Claims 21, 22, 25, 26, 29 and 30 under 35 U. S. C. 103**

In section 27 on page 20 of the Office Action, the Examiner has rejected claims 21, 22, 25, 26, 29, and 30 under 35 U. S. C. 103 as being unpatentable over Foster et al. (U. S. Publication No. 2003/0204618) as applied to claims 20, 24, and 28 above, and further view of Lin et al. (U. S. 6,272,522).

Claims 21 and 22 depend from independent claim 20, claims 25 and 26 depend from independent claim 24, and claims 29 and 30 depend from independent claim 28. Further, the Lin et al. reference does not cure the deficiencies of Foster et al. Claims 21, 22, 25, 26, 29 and 30 include all the feature of the claim from which they depend plus additional features which are not taught or suggested by the prior art. Therefore it is submitted that claims 21, 22, 25, 26, 29 and 30 patentably distinguish over the prior art.

**Rejection of Claims 23, 27, and 31 under U. S. C. 103**

In section 34 on page 26 of the Office Action, the Examiner has rejected claims 23, 27, and 31 under 35 U. S. C. 103 as being unpatentable over Foster et al. (U.S. Publication No.2003/0204618) and Lin et al. (U. S. 6,272,522).

The Examiner asserts that Foster discloses a virtual interface setting unit that creates and manages virtual interfaces on a router control device according to corresponding network interfaces of a forwarder because Foster discloses that the IFM maintains a virtual identifier table for each of its table (Page 5, paragraph [0029]).

However, Foster fails to disclose:

a virtual interface setting unit that that creates and manages virtual interfaces on a router control device according to corresponding network interfaces of a forwarder, each of the virtual interfaces having address information that is associated with one of the network interfaces of the forwarder;

Therefore, it is submitted that claim 23 patentably distinguishes over the prior art.

Referring to claims 27 and 31, it is submitted that the prior art does not teach or suggest:

creating and managing virtual interfaces on a router control device according to corresponding network interfaces of a forwarder, each of the virtual interfaces having address information that is associated with one of the network interfaces of the

forwarder;

Therefore, it is submitted that claims 27 and 31 patentably distinguish over the prior art.

### Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

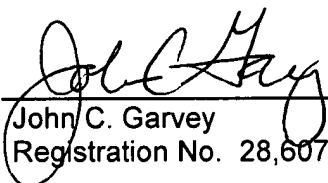
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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